

Serial No. 09/607,827

Art Unit 2877

LISTING OF CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1 through 38. (Cancelled)

Claim 39. (New) A device for making quantified determinations of the quality of a surface, comprising:

a light diode aligned at a first predetermined angle to the surface, said light diode emitting an emitted light at the surface, said emitted light having a light intensity over the entire visible spectral range;

a photo sensor aligned at a second predetermined angle to the surface, said photo sensor generating a signal based on a reflected light from the surface;

a filter arranged between said light diode and/or said photo sensor, said filter for adjusting said emitted light and/or said reflected light so that an aggregate spectra of said light diode, said photo sensor and said filter correspond to an aggregate of daylight spectrum and eye sensitivity; and

a controller configured to derive at least one characteristic of the surface based on said signal.

40. (New) The device according to claim 39, wherein said at least one characteristic is gloss.

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41. (New) The device according to claim 39, wherein said at least one characteristic comprises at least three characteristics.

42. (New) The device according to claim 39, wherein said at least one characteristic is a parameter selected from the group consisting of gloss, haze, distinctness of image, color, and any combinations thereof.

43. (New) The device according to claim 39, further comprising a scatter disk arrangement positioned with respect to said light diode so that said emitted light homogeneously illuminates the surface.

44. (New) The device according to claim 39, further comprising a second light diode.

45. (New) The device according to claim 39, further comprising a plurality of photo sensors arranged adjacent to one another.

46. (New) The device according to claim 39, wherein at least a portion of said emitted light comprises a light pattern.

47. (New) The device according to claim 46, wherein said light pattern comprises at least one light/dark edge.

48. (New) The device according to claim 46, wherein said light pattern is a pattern selected from the group consisting of a grid form, a cross-mesh form, an ellipse form, and a circular form.

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49. (New) The device according to claim 39, further comprising a light source aligned at a predetermined angle to the surface, said light source emitting an additional light at the surface.

50. (New) The device according to claim 49, wherein said predetermined angle is an angle selected from the group consisting of 0°, 10°, 15°, 20°, 30°, 45°, 60°, 75°, 80°, and 85°.

51. (New) The device according to claim 39, wherein said emitted light comprises at least one light strip.

52. (New) The device according to claim 39, further comprising a temperature device for determining a temperature of each of said light diode and said photo sensor so that a temperature-corrected determination of said at least one characteristic can be made.

53. (New) The device according to claim 39, further comprising a measurement wheel positionable on the surface to maintain a constant spacing therefrom during movement of the device relative to the surface.

54. (New) The device according to claim 39, wherein said photo sensor comprises at least three photo sensitive elements.

55. (New) The device according to claim 39, further comprising a measurement cycle of less than 0.2 seconds.

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56. (New) A method for making quantified determinations of the quality of a surface, comprising:

aligning a light diode at a first predetermined angle to the surface;

controlling said light diode to emit an emitted light in the visible spectrum at the surface;

aligning a photo sensor at a second predetermined angle to the surface so that said photo sensor receives a reflected light from the surface;

controlling said photo sensor to detect said reflected light and to emit an electrical measurement based on said reflected light;

filtering said emitted light and/or said reflected light so that an aggregate spectra corresponds to an aggregate of daylight spectrum and eye sensitivity; and

determining at least one characteristic of the surface based on said signal.

57. (New) The method according to claim 56, wherein determining said at least one characteristic comprises a measurement cycle of less than 0.2 seconds.

58. (New) The method according to claim 56, wherein said at least one characteristic is a parameter selected from the group consisting of gloss, haze, distinctness of image, color, and any combinations thereof.

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59. (New) The method according to claim 56, further comprising positioning a scatter disk arrangement with respect to said light diode so that said emitted light homogeneously illuminates the surface.

60. (New) The method according to claim 56, further comprising arranging a plurality of photo sensors adjacent to one another.

61. (New) The method according to claim 56, further comprising causing at least a portion of said emitted light to comprise a light pattern.

62. (New) The method according to claim 61, wherein said light pattern comprises at least one light/dark edge.

63. (New) The method according to claim 61, wherein said light pattern is a pattern selected from the group consisting of a grid form, a cross-mesh form, an ellipse form, and a circular form.

64. (New) The method according to claim 56, further comprising causing relative movement between said light diode and said photo sensor and the surface.